

SEQUENCE LISTING

<110> Berzofsky, Jay A.
Okazaki, Takahiro

<120> Enhanced HIV-1 Vaccines and Methods for Their Use

<130> 015280-481100US

<140> US 10/551,405
<141> 2005-09-29

<150> US 60/459,507
<151> 2003-03-31

<150> WO PCT/US04/09617
<151> 2004-03-29

<160> 23

<170> PatentIn Ver. 2.1

<210> 1
<211> 9
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:variant of
synthetic sequence motif derived from HIV-1
reverse transcriptase (RT) catalytic site region,
immunostimulating peptide

<220>

<221> MOD_RES
<222> (1)
<223> Xaa = any hydrophobic amino acid

<400> 1

Xaa Leu Tyr Gln Tyr Met Asp Asp Val
1 5

<210> 2

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:variant of
synthetic sequence motif derived from HIV-1
reverse transcriptase (RT) catalytic site region,
immunostimulating peptide, RT-2L9V, 2L9V

<400> 2

Val Leu Tyr Gln Tyr Met Asp Asp Val
1 5

```

<210> 3
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:variant of
      synthetic sequence motif derived from HIV-1
      reverse transcriptase (RT) catalytic site region,
      immunostimulating peptide, RT-1Y2L9V

<400> 3
Tyr Leu Tyr Gln Tyr Met Asp Asp Val
  1           5

<210> 4
<211> 409
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:variant of
      synthetic sequence motif derived from HIV-1
      reverse transcriptase (RT) catalytic site region,
      immunostimulating peptide

<220>
<221> MOD_RES
<222> (1)..(200)
<223> Xaa = any amino acid, may be present or absent

<220>
<221> MOD_RES
<222> (201)
<223> Xaa = any hydrophobic amino acid

<220>
<221> MOD_RES
<222> (210)..(409)
<223> Xaa = any amino acid, may be present or absent

<400> 4
Xaa Xaa
  1           5           10          15

Xaa Xaa
  20          25          30

Xaa Xaa
  35          40          45

Xaa Xaa
  50          55          60

Xaa Xaa
  65          70          75          80

Xaa Xaa
  85          90          95

```

Xaa		
100	105	110
Xaa		
115	120	125
Xaa		
130	135	140
Xaa		
145	150	155
Xaa		
165	170	175
Xaa		
180	185	190
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Leu Tyr Gln Tyr Met Asp Asp		
195	200	205
Val Xaa		
210	215	220
Xaa		
225	230	235
Xaa		
245	250	255
Xaa		
260	265	270
Xaa		
275	280	285
Xaa		
290	295	300
Xaa		
305	310	315
Xaa		
325	330	335
Xaa		
340	345	350
Xaa		
355	360	365
Xaa		
370	375	380
Xaa		
385	390	395
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa		
405		

<210> 5
 <211> 409
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:variant of
 synthetic sequence motif derived from HIV-1
 reverse transcriptase (RT) catalytic site region,
 immunostimulating peptide

<220>
 <221> MOD_RES
 <222> (1)..(200)
 <223> Xaa = any amino acid, may be present or absent

<220>
 <221> MOD_RES
 <222> (210)..(409)
 <223> Xaa = any amino acid, may be present or absent

<400> 5
 Xaa
 1 5 10 15

Xaa
 20 25 30

Xaa
 35 40 45

Xaa
 50 55 60

Xaa
 65 70 75 80

Xaa
 85 90 95

Xaa
 100 105 110

Xaa
 115 120 125

Xaa
 130 135 140

Xaa
 145 150 155 160

Xaa
 165 170 175

Xaa
 180 185 190

Xaa Xaa Xaa Xaa Xaa Xaa Val Leu Tyr Gln Tyr Met Asp Asp
 195 200 205

Val Xaa
210 215 220

Xaa
225 230 235 240

Xaa
245 250 255

Xaa
260 265 270

Xaa
275 280 285

Xaa
290 295 300

Xaa
305 310 315 320

Xaa
325 330 335

Xaa
340 345 350

Xaa
355 360 365

Xaa
370 375 380

Xaa
385 390 395 400

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
405

```
<210> 6
<211> 409
<212> PRT
<213> Artificial Sequence
```

<220>
<223> Description of Artificial Sequence:variant of
synthetic sequence motif derived from HIV-1
reverse transcriptase (RT) catalytic site region,
immunostimulating peptide

<220>
<221> MOD_RES
<222> (1)..(200)
<223> Xaa = any amino acid, may be present or absent

<220>
<221> MOD_RES
<222> (210)..(409)
<223> Xaa = any amino acid, may be present or absent

<400> 6
 Xaa
 1 5 10 15
 Xaa
 20 25 30
 Xaa
 35 40 45
 Xaa
 50 55 60
 Xaa
 65 70 75 80
 Xaa
 85 90 95
 Xaa
 100 105 110
 Xaa
 115 120 125
 Xaa
 130 135 140
 Xaa
 145 150 155 160
 Xaa
 165 170 175
 Xaa
 180 185 190
 Xaa Xaa Xaa Xaa Xaa Xaa Tyr Leu Tyr Gln Tyr Met Asp Asp
 195 200 205
 Val Xaa
 210 215 220
 Xaa
 225 230 235 240
 Xaa
 245 250 255
 Xaa
 260 265 270
 Xaa
 275 280 285
 Xaa
 290 295 300
 Xaa
 305 310 315 320

Xaa
325 330 335

Xaa
340 345 350

Xaa
355 360 365

Xaa
370 375 380

Xaa
385 390 395 400

Xaa
405

<210> 7
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:HIV-1 reverse transcriptase (RT) catalytic site region sequence motif, wild-type RT (179-187), RT-WT

<400> 7
Val Ile Tyr Gln Tyr Met Asp Asp Leu
1 5

<210> 8
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:variant of synthetic sequence motif derived from HIV-1 reverse transcriptase (RT) catalytic site region, RT-1Y immunostimulating peptide

<400> 8
Tyr Ile Tyr Gln Tyr Met Asp Asp Leu
1 5

<210> 9
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:HIV-gag peptide, gag (p17) (77-85), p17-WT

<400> 9
Ser Leu Tyr Asn Thr Val Ala Thr Leu
1 5

<210> 10
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:Flu matrix
peptide 58-66, FMP, Flu-MP (58-66)

<400> 10
Gly Ile Leu Gly Phe Val Phe Thr Leu
1 5

<210> 11
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:variant of
synthetic sequence motif derived from HIV-1
reverse transcriptase (RT) catalytic site region
immunostimulating peptide

<220>
<221> MOD_RES
<222> (1)
<223> Xaa = any hydrophobic amino acid, preferably Val

<400> 11
Xaa Leu Tyr Gln Tyr Met Asp Asp Val
1 5

<210> 12
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:RT (179-187)-WT
alanine substituted peptide 1A

<400> 12
Ala Ile Tyr Gln Tyr Met Asp Asp Leu
1 5

<210> 13
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:RT (179-187)-WT
alanine substituted peptide 2A

<400> 13
Val Ala Tyr Gln Tyr Met Asp Asp Leu
1 5

<210> 14
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:RT (179-187)-WT
alanine substituted peptide 3A

<400> 14
Val Ile Ala Gln Tyr Met Asp Asp Leu
1 5

<210> 15
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:RT (179-187)-WT
alanine substituted peptide 4A

<400> 15
Val Ile Tyr Ala Tyr Met Asp Asp Leu
1 5

<210> 16
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:RT (179-187)-WT
alanine substituted peptide 5A

<400> 16
Val Ile Tyr Gln Ala Met Asp Asp Leu
1 5

<210> 17
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:RT (179-187)-WT
alanine substituted peptide 6A

<400> 17
Val Ile Tyr Gln Tyr Ala Asp Asp Leu
1 5

<210> 18
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:RT (179-187)-WT
alanine substituted peptide 7A

<400> 18
Val Ile Tyr Gln Tyr Met Ala Asp Leu
1 5

<210> 19
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:RT (179-187)-WT
alanine substituted peptide 8A

<400> 19
Val Ile Tyr Gln Tyr Met Asp Ala Leu
1 5

<210> 20
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:RT (179-187)-WT
alanine substituted peptide 9A

<400> 20
Val Ile Tyr Gln Tyr Met Asp Asp Ala
1 5

<210> 21
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:RT (179-187)-WT
substituted peptide 2L

<400> 21
Val Leu Tyr Gln Tyr Met Asp Asp Leu
1 5

```

<210> 22
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:RT (179-187)-WT
      substituted peptide 9V

<400> 22
Val Ile Tyr Gln Tyr Met Asp Asp Val
 1           5

<210> 23
<211> 408
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:variant of
      synthetic sequence motif derived from HIV-1
      reverse transcriptase (RT) catalytic site region,
      immunostimulating peptide, fusion molecule

<220>
<221> MOD_RES
<222> (1)..(200)
<223> Xaa = any amino acid, may be present or absent

<220>
<221> MOD_RES
<222> (201)
<223> Xaa = any hydrophobic amino acid

<220>
<221> MOD_RES
<222> (209)..(408)
<223> Xaa = any amino acid, may be present or absent

<400> 23
Xaa Xaa
 1           5           10           15

Xaa Xaa
 20           25           30

Xaa Xaa
 35           40           45

Xaa Xaa
 50           55           60

Xaa Xaa
 65           70           75           80

Xaa Xaa
 85           90           95

Xaa Xaa
100          105          110

```

Xaa															
115															125
Xaa															
130															140
Xaa															
145															160
Xaa															
165															175
Xaa															
180															190
Xaa	Tyr	Gln	Tyr	Met	Asp	Asp	Val								
195															205
Xaa															
210															220
Xaa															
225															240
Xaa															
245															255
Xaa															
260															270
Xaa															
275															285
Xaa															
290															300
Xaa															
305															320
Xaa															
325															335
Xaa															
340															350
Xaa															
355															365
Xaa															
370															380
Xaa															
385															400
Xaa															
405															